



US009680757B2

(12) **United States Patent**  
**Eggleston et al.**

(10) **Patent No.:** **US 9,680,757 B2**  
(45) **Date of Patent:** **\*Jun. 13, 2017**

(54) **SYSTEM AND METHOD FOR  
MANAGEMENT OF CLOUD-BASED  
SYSTEMS**

(58) **Field of Classification Search**

CPC ..... H04L 12/24; H04L 41/00; H04L 41/0631;  
H04L 12/2874; H04L 26/02; H04L 43/00;

(Continued)

(71) Applicant: **DeepField Networks, Inc.**, Ann Arbor,  
MI (US)

(72) Inventors: **Joseph E. Eggleston**, Ann Arbor, MI  
(US); **Craig H. Labovitz**, Ann Arbor,  
MI (US)

(56)

**References Cited**

**U.S. PATENT DOCUMENTS**

6,073,174 A \* 6/2000 Montgomerie ..... G06F 15/17  
379/106.03  
6,088,659 A \* 7/2000 Kelley ..... G01D 4/004  
340/870.02

(Continued)

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-  
claimer.

*Primary Examiner* — Sargon Nano

(74) *Attorney, Agent, or Firm* — Wolf, Greenfield &  
Sacks, P.C.

(21) Appl. No.: **14/922,737**

(22) Filed: **Oct. 26, 2015**

(65) **Prior Publication Data**

US 2016/0043956 A1 Feb. 11, 2016

**Related U.S. Application Data**

(63) Continuation of application No. 13/760,780, filed on  
Feb. 6, 2013, now Pat. No. 9,172,591.

(Continued)

(51) **Int. Cl.**

**H04L 12/26** (2006.01)

**H04L 12/24** (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC ..... **H04L 47/2441** (2013.01); **H04L 41/00**  
(2013.01); **H04L 41/12** (2013.01);

(Continued)

(57)

**ABSTRACT**

System and method for reporting usage of a network infra-  
structure includes obtaining a map that includes at least one  
flow-mapping that correlates a flow feature with a service  
and that correlates a flow feature with an endpoint type,  
wherein the endpoint types include at least a subscriber type  
and a service type; at a first computer, receiving flow  
telemetry of a network infrastructure, the flow telemetry  
representing at least the destination and source attributes for  
network traffic in the flow telemetry; categorizing the flow  
telemetry into at least a subscriber flow category based on  
the source and destination endpoint types of the traffic; for  
subscriber flow telemetry of a subscriber, processing the  
subscriber flow telemetry into at least one flow feature;  
identifying at least one service to attribute to at least a  
portion of the subscriber flow telemetry, the service identi-  
fied through the processed flow feature and a flow-mapping.

**20 Claims, 11 Drawing Sheets**

